

Addendum/Lessons Learned to the ROB2 Installation Instructions

Version date 09/26/03

IMPORTANT

This addendum goes with the installation instructions you received with the installation kit shipped to you. The kit included 3 CDs, log output, release notes, and cover memo with the OB2 installation instructions. If page numbers are referenced, in the addendum they correspond to the installation document you received with the installation kit.

Important General Information:

1. The new rap version of AVNFPS was released on August 4, 2003. Sites that use AVNFPS should install this version before they install OB2, as the setup GUI in the current version of AVNFPS is not supported in OB2. (8/5/03)
2. For OB2, it was planned that the formats of the HWO and SPS were going to change from non-segmented to segmented. However, it was discovered that the current CAFÉ formatters for those products will not work properly in OB2. An updated CAFÉ formatter will not be available until late October. As a result, a decision was made to hold off on implementing the segmented formats for all sites until December 2003. This change means that WWA users will have to copy back their OB1 templates until the switchover date.

In Part 15, a post install step 5B1a, was changed to ensure that the OB1 version of the HWO/SPS templates were copied back into data/fxa/customFiles, after the OB2 upgrade. Most likely the WWA focal point will want to do this. In addition 5B1b was changed because a configuration modification was needed so that the SPS/HWO products created in WWA were “non-segmented.” The OB2 default was to have these products created as segmented products. (8/15/03)

3. There is a bug in the OB2 version of the HWR program. At 1000 AM and 1000 PM, the SWR product drops the leading 1 on the date/time group of the Mass News Disseminator (MND) header. The fix for this is bundled with maintenance release OB2.1 which was deployed September 24.

If a site that issues the SWR is concerned about this bug, a procedure was placed in Part 15, step 5E. The procedure will temporarily point your AWIPS system back to the OB1 version until you install OB2.1. (Updated 9/26/03)

4. If you did not install OB2 yet, ignore Attachment “i.” (8/21/03)
It contains a procedure to fix a potential WWA problem for sites that installed OB2

before August 21st. Operational WFOs that did the install before August 21 and that use WWA operationally need to look at the procedure to see if they are affected.

5. Starting October 1, the OB2 NGIT installation support will be reduced to one person. This will impact both the number of sites supported per day as well as the number of hours of installation support per day. The new support levels are as follows:
 1. limit of 3 sites per day Monday through Thursday
 2. daily installation support hours on Monday, Tuesday, and Wednesday is 8am to 5pm ET
 3. daily installation support hours on Thursday is 10am to 7pm ET
 4. Sites are free to choose any install day until the quota of 3 sites is filled for that day. However, on Thursdays, since West Coast sites, RFCs, and OCONUS sites may wish to start later because of time or operational considerations, we would like to try to leave any presently untaken Thursday slots on the calendar for these sites on that day.

The install schedule for OB2 will be extended until November 20 to accommodate this reduction in support. If you have sites that have already scheduled in October but are uncomfortable with the support hours for their install day, they can reschedule any install day through November 20. It is important that sites plan to complete their install within the advertised time frame, e.g., not waiting until noon to start when the window is 8 to 5. That is because we wouldn't want to routinely keep the install person late into the evening, because he has to come back the next morning for the next group of sites.

PART 0: Pre-installation Requirements (complete before day of install)

Part 0, page 6, step 6, replace bullet 3 with the following:

(8/5/03)

- Secure a good LDAD backup a week or so before the upgrade. Use System Administration Note 12 entitled “LDAD Backup and Restore Procedure.” This document is located on the following web page:
http://www.oso3.nws.noaa.gov/awips_new.htm

13. The OB2 upgrade will remove the Old Radar Archiver Software. As a result, if you have a customized version of the "radar menu," which is found in the file [awips/fixa/data/localization/LLL/radarDataMenus.template](#), where LLL is the local site id, you will need to remove the "archive button" from the radar menu. If you do not, the "archive button" will remain active after the OB2 upgrade. This would be a problem because we found in OB2 alpha test sites that if the "archive button" is still present after the OB2 upgrade, **D2D will not start up.**

On lx1, lx2 and all nodes do the following:

In order to remove the "archive button," search the radarDataMenus.template file for "archive" and remove the line.

Note: if you do not have a customized version of the radar menu, you should not have a problem because an updated "radar menu" without the archive button is being delivered in OB2.

Part 0, page 13, step 16a, had a bug. New step 16 should be as following: (8/7/03)

16. As mentioned earlier, a main feature of the OB2 upgrade is that the site localization is done on lx1, not ds1. The localization results are then pushed everywhere else. In previous upgrades, the localization was done on ds1 then pushed to the other devices (i.e. ds2, as1, as2, ws#). This change means that localization-related files on lx1 must be in "baseline condition" or else a corrupt localization will be propagated throughout.

For example, we highly recommend that you take the following file from ds1:

- a. /awips/fxa/data/localization/LLL/LLL-hydroSiteConfig.txt
and copy it to both lx1 and lx2 to subdirectory:
/awips/fxa/data/localization/LLL/LLL-hydroSiteConfig.txt

In addition, we highly recommend that you take the following 2 files from ds1:

- b. /awips/fxa/data/localization/LLL/LLL-acqPatternAddOns.txt
- c. /awips/fxa/localization/LLL/LLL-portinfo.txt

and move them into the data/fxa/customFiles directory. This will ensure these two files are available for not only OB2 but OB3 and beyond. After placing them into customFiles be sure to remove them from localization/LLL.

Part 0, page 13, step 17. This is a new step: (8/21/03)

17. Verify AX BIOS settings

Do the procedure below to check following BIOS settings and verify that the AX will boot successfully without a keyboard. This could affect the OB2 upgrade. Apparently IBM sent some of this hardware with the setting disabled.

To enter the BIOS settings for the AX do the following:

- (1) Hook up monitor to the BLUE scsi connector on the back of device
- (2) Hook up keyboard to the 2nd adapter, below mouse on back
- (3) Reboot AX
- (4) Hit F1 key as it boots to the IBM screen
- (5) You should after about 1 minute get a BLUE BIOS screen
- (6) Scroll down about 6 spaces to START OPTION
- (7) Make sure Displayless and Keyboardless are enabled, if not use left and right arrows to make them such
- (8) Hit Esc twice
- (9) Save and exit settings

It should then boot up to the AX login screen, and then disconnect the keyboard and monitor, and the BIOS is changed.

PART 2: Install OB2 Archiver Software

Part 2, page 2-1, steps 1-3 are ok, but we need to add step 4.

(8/21/03)

Automatically Saved and Restored Information:

/etc/rc.d/rc.local will be backed up

This applies to both RFCs and WFOs.

1. From **DS1 as root**, run the "installAX_OB2" script to install the Archiver software.
(Sample output and error information are shown in the Script Log Output, page A2-1.)

Note: Ensure you do not have a diskette in the AX drive before you proceed.

Note: This will load the default configuration. Site modifications will need to be re-added.

```
script -a /home/ncfuser/installAXOB2.out
```

```
cd /cdrom
```

```
./installAX_OB2
```

 (This step can take from 5 to 10 minutes.)

NOTE: This script will reboot the AX at a WFO.

2. After the script ends, type:

```
./stopscript
```

3. Review the script output file, "/home/ncfuser/installAXOB2.out," to ensure that no unexpected errors (such as "Text file busy", "fail", "error," etc.) were encountered during the installation.
4. Ping the AX to verify successful LAN connectivity after the reboot in step 1. (8/22/03)

If no errors occurred proceed to PART 3, otherwise contact the NCF.

PART 4: Install OB2 Software on Linux

Part 4, page 4-1, step 2. Add the following sentence to the note. (8/6/03)

You might want to ping the lx boxes to make sure they are back on the network before proceeding to step 3. Otherwise, the files from step 3 may not get copied to the appropriate locations on lx1 or lx2.

b. **WFO sites that obtained Watch Warning Advisory (WWA) templates ahead of time need to do step 3b:**

If you are a WFO that did Part 0, step 10 and Attachment "e" where you downloaded the WWA templates, and placed your customizations into them, you should do the following commands. You need to first go to the data/fxa/customFiles directory and move out the old WWA templates [see 1) below]. After this, you need to copy the WWA templates you downloaded and customized into the data/fxa/customFiles directory [see 2) below]. If you did step 10 and attachment "e" your downloaded and customized templates should be in the /data/local/ob2WWA directory.

- 1) Remove the old templates and place a copy into the **ob1WWA_bu** directory (CCC is the localization site ID):

NOTE: Type carefully

```
cd /data/fxa/customFiles
cp WWA*.preWWA /data/local/ob1WWA_bu
cp nwr*.preWWA /data/local/ob1WWA_bu
cp CCC-WWA*.preWWA /data/local/ob1WWA_bu
cp CCC-nwr*.preWWA /data/local/ob1WWA_bu
```

- 2) Copy the templates downloaded and customized into data/fxa/customFiles:

```
cd /data/local/ob2WWA
cp * /data/fxa/customFiles
```


PART 15: OB2 After-Install Procedures

5. Miscellaneous Post install procedures (must do on day of upgrade)

Part 15, page 5-4, updated 5B (8/20/03), keep 5C and D, added 5E (8/6/03)

B. OB2 Watch Warning Advisory (WWA) Updates (Operational WFOs) (8/15/03)

1. **If you did part 0, step 10 and attachment "e"**, before the upgrade:
You obtained the OB2 WWA templates and customized them. In part 4 step 3b, you copied these into the /data/fxa/customFiles directory.

VERY IMPORTANT

WWA focal points most likely need to do the following:

Operational WFOs that use WWA should not run WWA for HWO and SPS templates/products until they do the following steps a and b below.

- a. You now need to copy your OB1 SPS and HWO templates back into /data/fxa/customFiles because a decision was made to keep the SPS and HWO templates non-segmented until December 2003. You must do this because the OB2 versions of these SPS/HWO templates will produce segmented versions of these products.

Most likely the WWA focal point will need to obtain the OB1 HWO/SPS templates that apply for your site. All of the OB1 WWA templates should be found in data/local/ob1WWA_bu. The WWA focal point will know for sure, but most likely the ".wwaProd" files that need to be copied back will include the following:
(8/20/03)

- A. Winter Storm Outlook (WWA_ww_outlk.wwaProd),
- B. Excessive Heat Outlook (WWA_heat_outlook.wwaProd),
- C. Frost/Freeze Outlook (WWA_frostfrz_outlk.wwaProd),
- D. Hazardous Weather Outlook (WWA_hazard_outlk.wwaProd),
- E. High Wind Outlook (WWA_hiwind_outlk.wwaProd),
- F. No Hazardous Weather Outlook (WWA_nonhazard_outlk.wwaProd),
- G. Special Weather Statement (WWA_specialstmt.wwaProd),
- H. Wind Chill Outlook (WWA_wndchil_outlk.wwaProd),
- I. Severe Weather Outlook (WWA_severe_outlook.wwaProd)

After copying the SPS/HWO templates back into /data/fxa/customFiles do step b.

- b. Sites that use WWA must re-configure the WWA software so that all SPS and HWO products created from the OB1 templates are non-segmented. To do this do the following:

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Go to Attachment "h" and do the procedure

- c. After doing steps a and b, as appropriate, you should run WWA and check all WWA templates to ensure they contain all the customizations you want and work well in OB2. In addition, ensure that all SPS/HWO products when created are non-segmented.

For the few WFOs that use framing. (8/20/03)
"Framing" will not work in OB2. The WWA focal point will need to ensure that no WWA templates contain "framing."

- 2. **If you did not do part 0 step 10**, you will need to:

- a. Customize the OB2 WWA templates and place the results into /data/fxa/customFiles. The exception to this is that you want to keep the OB1 version of the SPS/HWO products. The latter is needed because a decision was made to keep the SPS and HWO templates non-segmented til December 2003.
- b. After doing step a, go to Attachment "h" and do the procedure
- c. After doing steps a and b, you should run WWA and check all WWA templates to ensure they contain all the customizations you want and work well in OB2. In addition, ensure that all SPS/HWO products when created are non-segmented.

C. OB2 WarnGen Updates (**Operational WFOs**) (No change)

- 1. **If you did part 0 step11 and attachment "f"**, you should now be running OB2 software with the OB1 templates being active. This is the case even though the new OB2 WarnGen templates will reside in the data/fxa/nationalData directory.

At this time, you should run WarnGen and check all your WarnGen templates to ensure they contain all the customizations you want. Remember, at this point, you should have your OB1 templates active.

2. **If you did not do part 0, step 11 and attachment "f"**, then at this point all your customized OB1 templates in /data/fxa/customFiles and localization/LLL are still active. However, if you need to use a template that is not customized, then a new OB2 template will be used to create your message. Before December 2003, the main difference between having an "active" OB2 and OB1 template, is that the "followup messaging" will be different for each. The OB1 template will act similarly to the way it did in OB1, but the new "followup messaging" will be active for the OB2 template. Information on the "followup messaging" capability and what it means operationally is found at:

<http://www-sdd.fsl.noaa.gov/~ramer/noaa/ob2-wgn/followUp.html>

A site may want to live with having a mixture of both OB1 and OB2 templates or do the following:

- a. Get a copy of the appropriate baseline template that was active during OB1 and place it into /data/fxa/customFiles and run a localization. or
- b. Customize the OB2 templates and activate them.

D. Operational WFOs: AX and WES Issue (No change)

One of the OB2 beta sites indicated that they lost connectivity between the AX and WES after the OB2 upgrade. Check this at this time. The fix used by the beta site was to add the WES information back into the AX hosts.allow and hosts.equiv file, then do the nfs stop & start as per the original WES instructions.

Part 15, 5E. (8/6/03....updated 9/26/03)

- E. There is a newly discovered bug found in the OB2 version of the HWR program. At 1000 AM and 1000 PM, the SWR product drops the leading 1 on the date/time group of the MND. The fix for this is expected to be bundled with maintenance release OB2.1 scheduled for deployment September 24.

If a site that issues the SWR is concerned about this bug, do the following. The procedure will temporarily point your AWIPS system back to the OB1 version. If the site plans on installing OB2.1 on the day of the upgrade, they can skip the fix below.

1. On ds1, as user fxa, edit the OB2 version of awips/fxa/bin/ingest.crontab.ds1 as shown below.

```
cd /awips/fxa/bin  
vi ingest.crontab.ds1
```

Look for the HWR section of the cron. Next comment out 2 lines the OB2 version of the instructions by placing a "# " at the beginning of each line. Next insert the OB1 version of the HWR the commands as shown below. After modification, the changed portion of the crontab will look as follows:

```
# HWR crons (MDL cronjobs)  
#10 * * * * csh -c '/awips/adapt/hwr/bin/hwrnwr -t >&! ${LOG_DIR}/hwrnwr.log'  
#10 * * * * csh -c '/awips/adapt/hwr/bin/hwrnwsws -t >&! ${LOG_DIR}/hwrnwsws.log'  
10 * * * * export FXA_HOME=/awips/fxa; . /awips/fxa/readenv.sh;umask  
002;$HWR_DIR/bin/hwrnwr -t > ${LOG_DIR}/hwrnwr.log 2>&1  
10 * * * * export FXA_HOME=/awips/fxa; . /awips/fxa/readenv.sh;umask  
000;$HWR_DIR/bin/hwrnwsws -t > ${LOG_DIR}/hwrnwsws.log 2>&1
```

2. Now restart cron by typing the following commands:

```
crontab ingest.crontab.ds1
```

3. If you want these changes to survive a ds2 failover, you will need root access to save this revised crontab in /etc/cmcluster/crons/fxa as:
ds1.dsswap
ds2.dsswap

Otherwise, you may need to repeat steps 1 and 2, if failover occurs.

Note: After you install OB2.1, you will have to undo these changes to resume using the OB2 HWR version.

Attachment “e” - Obtain OB2 WWA and WWA NWR Templates Before the OB2 Upgrade

Page e-2, bottom chart, 3rd line from bottom, correct the following typo: (8/14/03)

The template is listed as WWA_head_outlook.preWWA
It should be WWA_heat_outlook.preWWA

Page e-5, (end of step e), need to add a "/" in each of the four copy commands. The correct commands are: (8/14/03)

```
cp -p /data/fxa/customFiles/WWA*.preWWA .
cp -p /data/fxa/customFiles/nwr*.preWWA .
cp -p /data/fxa/customFiles ccc-WWA*.preWWA .
                                     Note:ccc is localization site id
cp -p /data/fxa/customFiles ccc-nwr*.preWWA .
```

At the end of Attachment "e", add new step F. (8/15/03)

F. This is a heads-up to the OB2 installer and WWA focal point.

Please note that a post install step was changed in part 15 step 5B1 and 5B2 (see addendum above). It is needed because Operational WFOs that use WWA should not run WWA for HWO and SPS templates/products until they do 15 step 5B, after the OB2 upgrade. This most likely will need to be done by the WWA focal point. You may wish to take a look at this procedure now and see what the step entails.

At the end of Attachment "e", add new step G. (8/20/03)

G. For the few WFOs that use framing in WWA templates.
"Framing" will not work in OB2. The WWA focal point will need to ensure that no WWA templates contain "framing."

Attachment “h” - Re-Defining WWA Configuration to Produce Non-Segmented Products for HWO/SPS (8/15/03)

This attachment was created from information from Section 2.1 of the *WWA OB2 Users Manual* (http://www.nws.noaa.gov/mdl/wwa/new_OB2.htm). It is needed because we want to ensure that the OB1 SPS and HWO products/templates which were just copied into /data/fxa/customFiles (see Part 15 Miscellaneous Post install Procedures, 5B1a) will be used to create non-segmented products.

The procedure below needs to be done for each of the specific product names listed in step 5 below, as appropriate.

Steps 10-15 are needed to activate the SPS/HWO templates which were recently copied into the /data/fxa/customFiles.

1. Open an xterm window on either lx1 or lx2.
- if done as user ifps skip to step 3
2. Login as user ifps:
`su -l ifps`
<enter ifpsusr password when prompted>
3. Launch the WWA Admin application:
`WWAAdmin.sh`
4. Select the *Hazard Menu Panel* by either selecting the *hazard* icon on the button bar or by selecting *edit*, then *Hazard Menu* on the menu bar.
5. Double click on the appropriate HWO/SPS hazard box.
These can include any of the following “Specific Product Names:”
 - A. Winter Storm Outlook (WWA_ww_outlk.wwaProd),
 - B. Excessive Heat Outlook (WWA_heat_outlook.wwaProd),
 - C. Frost/Freeze Outlook (WWA_frostfrz_outlk.wwaProd),
 - D. Hazardous Weather Outlook (WWA_hazard_outlk.wwaProd),
 - E. High Wind Outlook (WWA_hiwind_outlk.wwaProd),
 - F. No Hazardous Weather Outlook (WWA_nonhazard_outlk.wwaProd),
 - G. Special Weather Statement (WWA_specialstmt.wwaProd),
 - H. Wind Chill Outlook (WWA_wndchil_outlk.wwaProd),
 - I. Severe Weather Outlook (WWA_severe_outlook.wwaProd)
6. In the hazard configuration interface select the *Miscellaneous Format* tab and set the following fields:

Segmented Checkbox: **Unchecked for Non-segmented.**
Deselect the box next to segmented to make the product type non-segmented.

7. Save and exit the *hazard* configuration interface:

Select **Ok** button bottom left on interface

8. Repeat steps 5 through 7 for each hazard listed in 5 (A-I), as needed.

9. Exit WWA Admin application:

Select the **Exit** button from the bottom center of interface.

10. Login as user fxa:

su -l fxa
<enter password when prompted>

11. Run WWA lx1 localization by typing:

cd /awips/fxa/data/localization/scripts
./mainScript.csh f -wwa

12. Remotely log into lx2 by typing:

rlogin lx2
<enter password if prompted>

13. Run WWA lx2 localization by typing:

cd /awips/fxa/data/localization/scripts
./mainScript.csh f -wwa

14. Exit lx2 remote login session by typing:

exit

15. Exit by typing:

exit
exit
exit

Attachment “i” - Correction to OB2 Installation Instructions that Could Affect Sites that use WWA (8/21/03)

The following is a correction to a WWA problem as a result of a bug in the OB2 installation procedures used before August 21.

Operational WFOs that did the OB2 upgrade before August 21 need to look at the following. This will affect some operational WFOs but not others.

The IT of WFO PBZ discovered a bug in the OB2 install procedures that pertains to WWA that we wanted to pass on to the WFOs that completed the OB2 upgrade before August 21. We have updated the OB2 lessons learned/addendum for sites that did the upgrade starting August 21 so the following problem should not affect them. The problem below will affect sites that use WWA operationally and have customized files that we mistakenly removed in part 4, step3b1 of the OB2 installation procedures.

Sites affected:

Operational WFOs that used the “mv” command in Part 4 step3b1 in the Installation Instructions for Release OB2 and that use WWA operationally will be affected. To check to see if you ran the “mv” command, examine the log output file on lx1 called `/home/ncfuser/install1LXOB2.out` and see if the “mv” commands (see AWIPS Installation Procedures for OB2, Part 4, step 3b1) were used or whether you used the “cp” commands instead. Some sites that don’t use WWA probably skipped 3b1 completely which is OK... and if you are one of these sites you are not affected.

Summary of the problem:

If you were a WFO that used WWA operationally, then you did Part 0, step 10 and Attachment "e" of the OB2 installation procedures where you downloaded the WWA templates before the upgrade and placed your customizations into them. The directory where this occurred was `data/local/ob2WWA`.

On the day of the OB2 upgrade, you used the following “mv” command in part 4, step 3b1 to move off the existing WWA*, nwr*, CCC-WWA*, CCC nwr* templates to the directory `data/local/ob1WWA_bu`. The commands you ran were as follows:

- 1) (CCC is the localization site ID):

```
cd /data/fixa/customFiles
mv WWA*.preWWA /data/local/ob1WWA_bu
mv nwr*.preWWA /data/local/ob1WWA_bu
mv CCC-WWA*.preWWA /data/local/ob1WWA_bu
mv CCC-nwr*.preWWA /data/local/ob1WWA_bu
```


NOTE: This, unfortunately removed too many templates, because not all the WWA and nwr templates were delivered in OB2. In hindsight, we should have used a “cp” command instead. One of the changes to prevent this problem in the future was to tell sites to use a “cp” command instead of a “mv” command.

After doing the “mv” commands above, you then copied your customized templates in data/local/ob2WWA into the customFiles directory. The commands done were as follows:

- 2) Copy the templates downloaded and customized into data/fxa/customFiles:

```
cd /data/local/ob2WWA
cp * /data/fxa/customFiles
```

Part 4, step 3c you ran the `./InstallLXOB2.sh` script which, among other things did a localization. After this step the rest of the OB2 install scripts were completed this is what you would have in place from a WWA point of view:

- A. The OB2 WWA/nwr templates you customized and placed in customFiles would all be operational. This is what you want.
- B. For all the WWA/nwr templates not copied into customFiles above, only the baseline pre-OB2 WWA templates found in the data/fxa/nationalData directory are now active/operational. This may or may not be what you want.

General Solution:

You want to copy back into customFiles any WWA/nwr templates not delivered in OB2 that we accidentally removed in Part 4 step 3b1. After this you will need to re-run the appropriate localizations.

Directory **ob1WWA_bu** should contain all the pre-OB2 WWA/nwr templates found in /data/fxa/customFiles before you did the OB2 upgrade.

One approach:

You can copy one by one...back into data/fxa/customFiles any file found in ob1WWA_bu that is not already in data/fxa/customFiles. This should be the same as the files in /data/local/ob2WWA with the exception of the SPS/HWOs.

Another approach is to use the following procedure:

1. Since we want to keep what you already have in /data/fxa/customFiles directory we will change the permissions for the WWA/nwr templates to 444. This will make it impossible to replace the WWA/nwr templates with the copy command which will be used in step 2,

below. Note that CCC is the localization site ID for your backup site

As user FXA only!!!! Do the following:

```
cd /data/fxa/customFiles
chmod 444 WWA*.preWWA
chmod 444 nwr*.preWWA
chmod 444 CCC-WWA*.preWWA
chmod 444 CCC-nwr*.preWWA
```

2. Go to the ob1WWA_bu subdirectory and copy all the files from ob1WWA_bu into data/fxa/customFiles. Note that files in customFiles with permission 444 will not be replaced. Ensure you the fxa user:

```
cd /data/local/ob1WWA_bu
cp -p * /data/fxa/customFiles
```

3. Go to customFiles and change the permissions back to 775:

```
cd /data/fxa/customFiles
chmod 775 WWA*.preWWA
chmod 775 nwr*.preWWA
chmod 775 CCC-WWA*.preWWA
chmod 775 CCC-nwr*.preWWA
```

4. For the few WFOs that use framing (using the templates as a pre-format, that the user can modify or fill in the blanks).

"Framing" will not work in OB2. The WWA focal point will need to ensure that no WWA templates contain "framing."

5. Run the localization on lx1 and lx2 as user fxa:

- A. Run WWA lx1 localization by typing:

```
cd /awips/fxa/data/localization/scripts
./mainScript.csh f -wwa
```

- B. Remotely log into lx2 by typing:

```
rlogin lx2
<enter password if prompted>
```

- C. Run WWA lx2 localization by typing:

```
cd /awips/fxa/data/localization/scripts
./mainScript.csh f -wwa
```

- D. Remotely log into ds1 by typing:
rlogin ds1
<enter password if prompted>
- E. Run WWA ds1 localization by typing:
cd /awips/fxa/data/localization/scripts
./mainScript.csh f -wwa